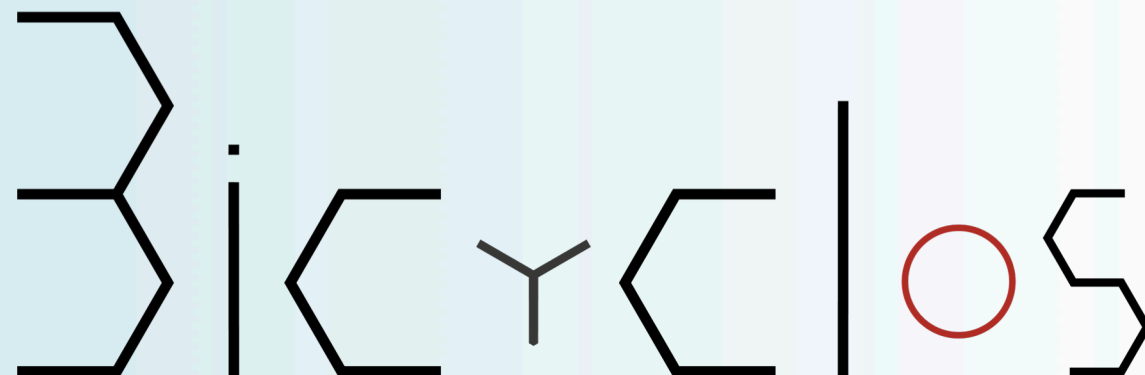
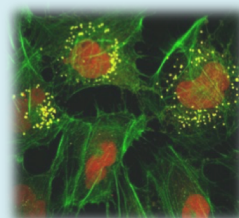


Sviluppo di nuove ciclodestrine



Problemi attuali:

- ✓ Miscele di ciclodestrine
- ✓ Sintesi non sostenibili



Biological tests of CD-based systems in 2D and 3D models



Construction and maintenance of a CD data base

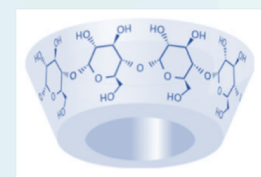


Proposta di CYCLODEL

- ✓ Ottenere composto singoli di ciclodestrine
- ✓ Semplificare la sintesi e renderla sostenibile



Preparation of CDs as drug and gene delivery systems and APIs



New green synthesis of CDs and optimization of existing protocols



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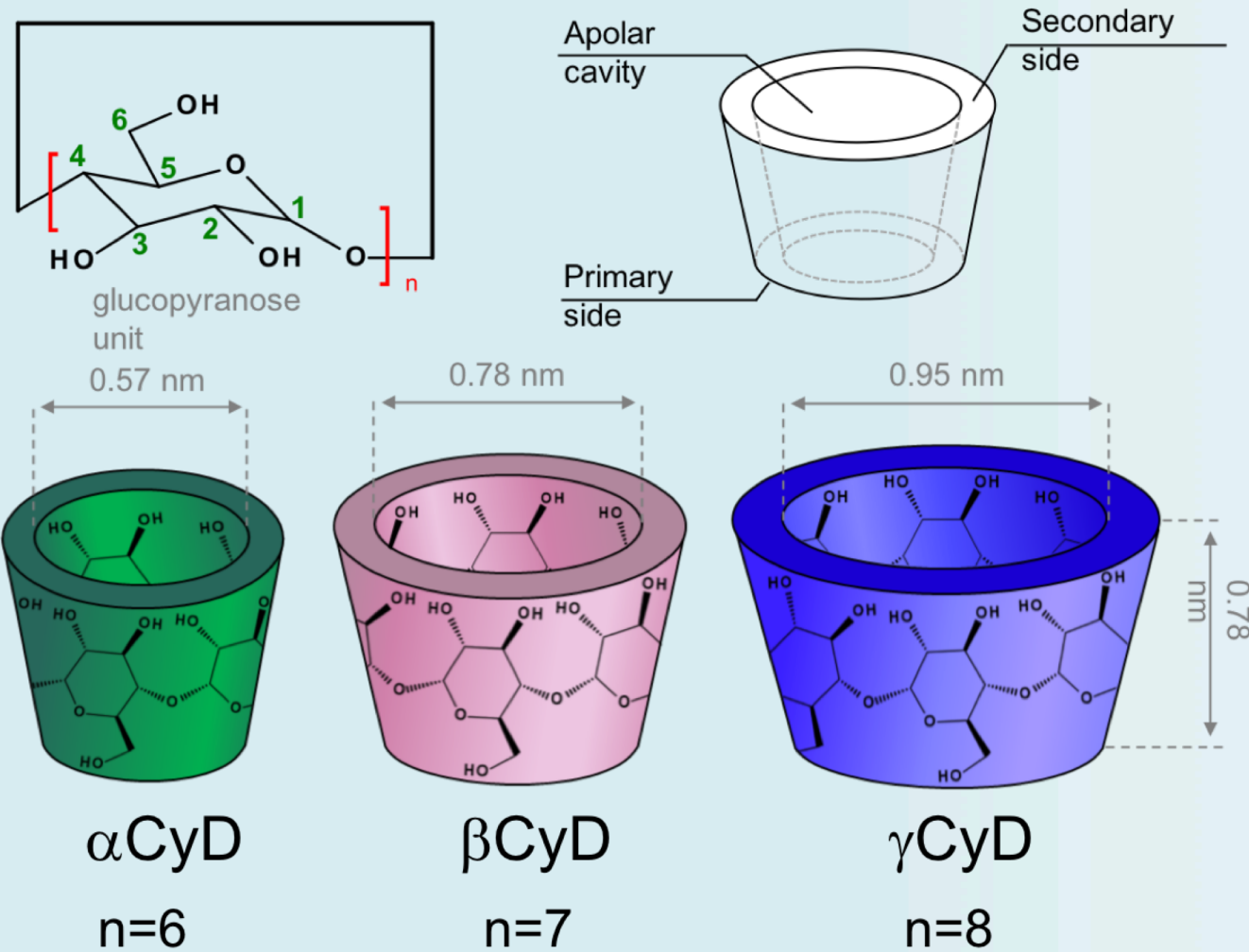


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Cycl_odel

Cyclodextrin buiding blocks of the polymer



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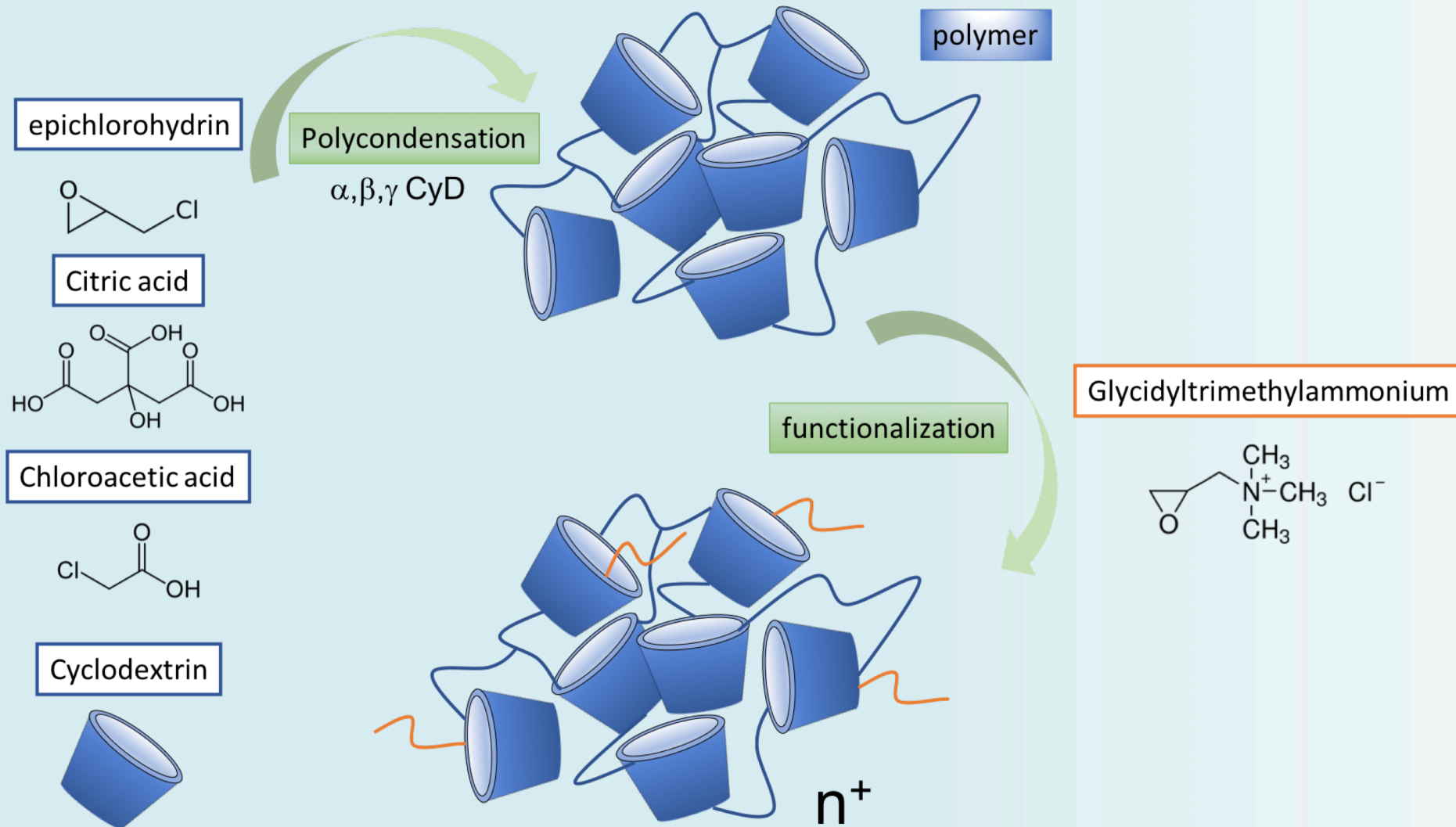


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Positively charged polymer



Type of Ingredient	Ingredient	Purpose
Messenger ribonucleic acid (mRNA)	<ul style="list-style-type: none"> Nucleoside-modified mRNA encoding the viral spike (S) glycoprotein of SARS-CoV-2 	Provides instructions the body uses to build a harmless piece of a protein from the virus that causes COVID-19. This protein causes an immune response that helps protect the body from getting sick with COVID-19 in the future.
Lipids (fats)	<ul style="list-style-type: none"> 2[(polyethylene glycol (PEG))-2000]-N,N-ditetradecylacetamide 1,2-distearoyl-sn-glycero-3-phosphocholine Cholesterol (plant derived) ((4-hydroxybutyl)azanediyl)bis(hexane-6,1-diyl)bis(2-hexyldecanoate) 	Work together to help the mRNA enter cells.
Sugar and acid stabilizers	<ul style="list-style-type: none"> Sucrose (table sugar) Tromethamine Tromethamine hydrochloride 	Work together to help keep the vaccine molecules stable while the vaccine is manufactured, frozen, shipped, and stored until it is ready to be given to a vaccine recipient.

<https://www.cdc.gov/coronavirus/2019-ncov/vaccines/different-vaccines/overview-COVID-19-vaccines>

<https://www.cdc.gov/coronavirus/2019-ncov/vaccines/different-vaccines/overview-COVID-19-vaccines.html>

<https://www.who.int/news-room/feature-stories/detail/how-do-vaccines-work?>

<https://www.nature.com/articles/s41418-020-00720-9>

<https://wellcome.org/news/seven-vital-questions-about-rna-covid-19-vaccines>

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